LAB – Chassis Inspection

Students: 1. _____ Date: _____
2. _____ Block: _____
3. _____

Fill in each box with the appropriate information.
Be sure to have the Instructor's initials before moving on to the next step. These are there to ensure everything is SAFE and CORRECT. Each team member must be able to answer questions from your instructor to receive credit for this lab.

VEHICLE IDENTIFICATION			
Year:		Make:	
Model:		Mileage:	
VIN Number:			

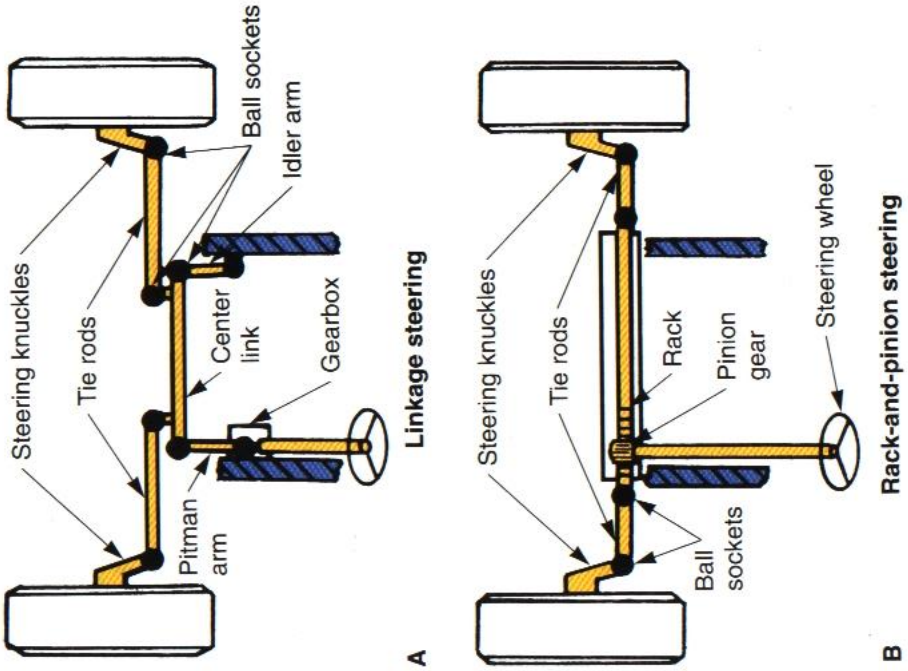
RAISE THE VEHICLE

- For this lab, the vehicle will need to be raised off the ground.
- While a floor jack and jack stands will work, a hoist is the best method.
- You will also need a trouble light to see everything clearly

Floor Jack & jack Stands:	**4-Post Hoist:**	**2-Post Hoist:**
• Check with your Instructor for the correct placement of the jack and jack stands. • Lifting and/or supporting in the wrong place can cause serious damage	• Vehicle in gear or park • Emergency brake is set • Wheels are chocked • Hoist is raised to a comfortable height • Rest on the locks	• Position the car correctly for best balance • Position arms; get me to check • Lock arms • Lift slightly and check balance and stability • Raise to a comfortable height • Rest on the locks
Jack Stands	4-Post	2-Post

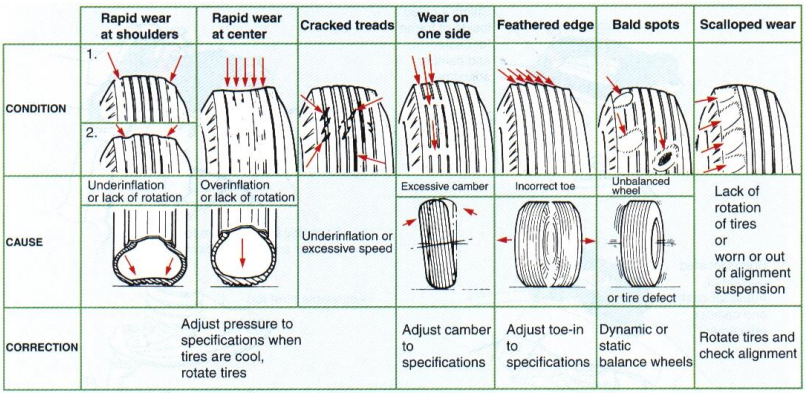
STOP!!! ***INSTRUCTOR'S INITIALS:***

 © G Wellwood 2022

STEERING	
IDENTIFICATION	What type of steering system does this vehicle have (circle)? [LINKAGE/PARALLELOGRAM] [RACK & PINION] 
STEERING	Your steering system has (#) _____ joints where wear & play can occur. Gently move the steering wheel back and forth, looking for play in ANY joint or connection in the steering system. ANY movement in ANY joint is bad. Squeeze the tie rods by your hand. Any perceivable play is bad. Play found in the following joints: How much play is noticed in the steering wheel before the wheels even start to move? Millimeters of movement at the wheel: _____
STOP!	***INSTRUCTOR'S INITIALS:***

 © G Wellwood 2022

TIRE WEAR

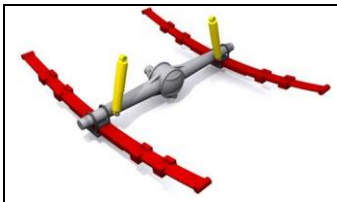


Wear found in the tires (there might be more than one wear pattern happening:

SUSPENSION

DESIGN

Label the appropriate picture with an **F** for **Front**, and **R** for **Rear**



Live axle with leaf spring

Trailing arm

Twin I-beam

Solid axle, coil spring, panhard bar

Triangulated 4-link (Satchell)

Live axle with DeDion

MacPherson strut

Double-Wishbone

Double-Wishbone (also)

BUSHINGS

Bushings are usually rubber. They can don't last forever. You will find them wherever anything moves. Look for cracks, missing, wear/elongation, etc.

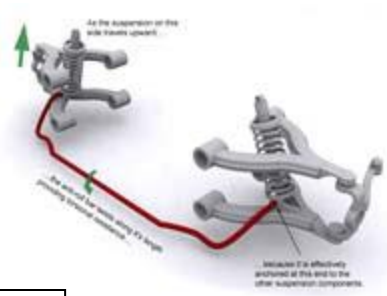
Damage/Wear you found:

 © G Wellwood 2022

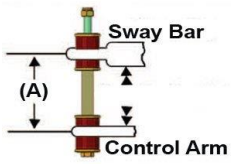
SWAY BARS

Sway bars improve handling by preventing the body from leaning over in a corner. You may have a front and rear bar, you may have a front bar only, or you may have no bars at all.

The bars do not wear out, but the end links do.



Damage/Wear you found:



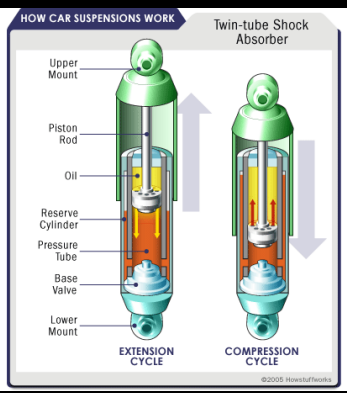
STOP! ***INSTRUCTOR'S INITIALS:***

SHOCKS/STRUTS

Almost all shock absorbers and MacPherson struts today are oil-filled and gas pressurized.

The oil is what damps the spring motion, and the gas charge helps prevent the oil from aerating (bubbles).

Shocks are vital to a car's control and stability. Worn shocks should ALWAYS be replaced in pairs – if one is bad, the other is probably not far behind and mismatched shocks may behave unsafely.



INSPECT

Oil leaking from the top of a shock means its oil seals are blown, and the shock is worn out

Leaks
[Front]: _____ [Rear]: _____

A shock that cannot control the spring means its valving is blown, and the shock is worn out

Bounce the car, and watch it come to a stop. Number of continued bounces?
[Front]: _____ [Rear]: _____

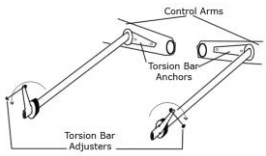
SPRINGS

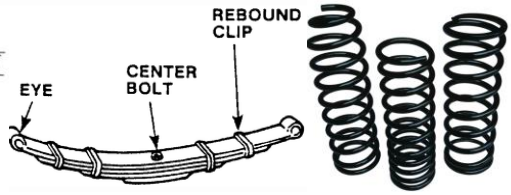
The springs support the vehicle, not the shocks.

All springs can fatigue, bend and break.

Leaf spring packs sometimes wear the leaves out by rubbing together over years of use.

Torsion bars have the advantage of being adjustable.





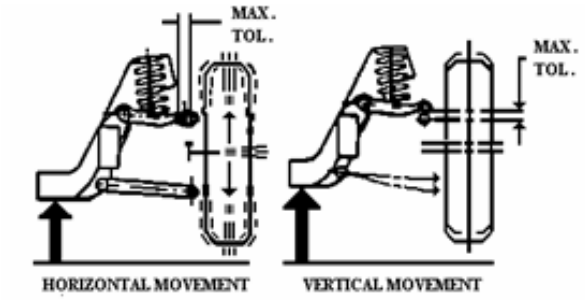
 © G Wellwood 2022

FRONT	Type of spring:	Ride height (ground to fender edge): _____ inches Any broken coils or leafs: [Yes] [No]
REAR	Type of spring:	Ride height (ground to fender edge): _____ inches Any broken coils or leafs: [Yes] [No]

Uneven ride height often indicates sagging springs. Which springs appear to be sagging?

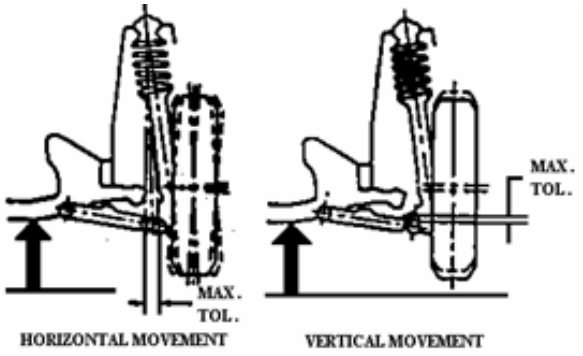
STOP! ***INSTRUCTOR'S INITIALS:***

BALL JOINTS



SPRING ON UPPER CONTROL ARM

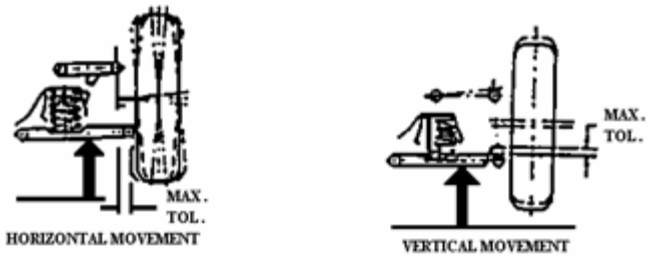
FIGURE 1



MACPHERSON STRUT

Strut cars are checked by supporting the vehicle by the chassis, and prying the wheel up/down and side/side to check for play. Double-wishbone cars are checked by supporting the car by the control arm, and prying the wheel up/down/side/side to check for play.

Demonstrate checking the ball joints to your instructor.



SPRING OR TORSION BAR ON LOWER CONTROL ARM

RAISING POSITIONS FOR SUSPENSION SYSTEMS

FIG

STOP!!! **INSTRUCTOR'S INITIALS:**

If the car had a tendency to wander, what are three likely causes?

1. 2. 3.

If the car had a tendency to "float" after hitting bumps, what is the most likely cause?

 © G Wellwood 2022